

Carbon Dioxide: Analysis of Variability

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Measurements of carbon dioxide both globally and locally are key to much of the work on climate change. The measurements show a near-monotonic increase over the last decades, but there are still important questions about what governs the interannual variability. Questions remain about the shape of the trend (linear, quadratic or exponential) and are important to be able to make projections of CO₂ levels into the future. Differences in the seasonal nature of trends that exist are not fully explained at the current time. A variety of efforts are underway to understand the existing variability. The analysis shows that the interannual variability is highest in the winter season and lowest in the summer. The trends are similarly dependent on season with the highest trends observed in the winter over the last decade.

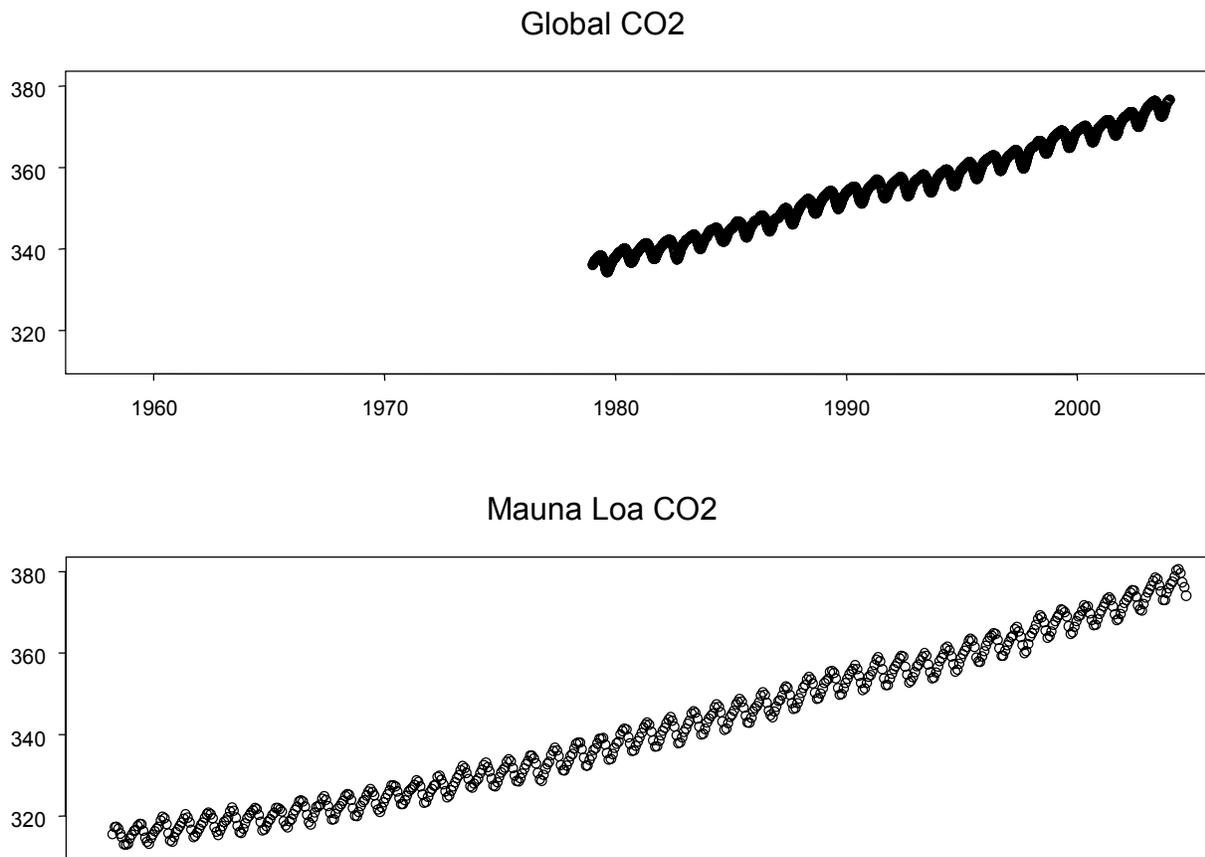


Figure 1. Global and Mauna Loa CO₂ records show clear increases over the recording period. However much of the interannual variability is unexplained. Closer examination of the data show that the trends have been somewhat uneven and that the interannual variability is seasonally dependent.